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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/689,792 | 10/20/2003 | Larry Neil Lewis | 132913-1 | 7574 |
| 6147 | 7590 | 11/20/2007 | | |
| GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309 | | | EXAMINER THOMPSON, CAMIE S | |
| | | | ART UNIT 1794 | PAPER NUMBER |
| | | | NOTIFICATION DATE 11/20/2007 | DELIVERY MODE ELECTRONIC |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/689,792

Applicant(s)

LEWIS ET AL.

Examiner

Camie S. Thompson

Art Unit

1794

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCE filed August 27, 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 8-12, 14, 16-28, 51-55, 58-62, 64, 65 and 67-80 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 8-12, 14 and 16-28, 51-55, 58-62, 64-65 and 67-80 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 29, 2007 has been entered.
2. Applicant's amendment and accompanying remarks filed August 29, 2007 are acknowledged.
3. Examiner acknowledges amended claims 8, 17, 58 and 69.
4. Examiner acknowledges cancelled claims 6-7, 13, 15, 29-50, 56-57, 63, 81-128.
5. The rejection of claims 8 and 57 under 35 U.S.C. 112, second paragraph is overcome by applicant's amendment.
6. The rejection of claims 1-5, 8, 14, 16-18, 20-22, 24-25, 27-28, 51-55, 58, 64-65, 67-69, 71-76, 78-80, 111-118, 120-121, 124-125 and 127-128 under 35 U.S.C. 102(b) as being anticipated by Hosokawa et al., U.S. Patent Number 6,284,393 is withdrawn due to applicant's argument.
7. The rejection of claims 9-12, 22-23, 59-62, 74 and 122-123 under 35 U.S.C. 103(a) as being unpatentable over Hosokawa et al., U.S. Patent Number 6,284,393 is withdrawn due to applicant's argument.

8. The rejection of claims 1, 19, 51, 70 and 119 under 35 U.S.C. 103(a) as being unpatentable over Hosokawa et al., U.S. Patent Number 6,284,393 in view of Sakai et al., U.S. Patent Number 4,824,488 is withdrawn due to applicant's argument.
9. The rejection of claims 1, 22-23, 51, 73-77 and 122-123 under 35 U.S.C 103(a) as being unpatentable over Hosokawa et al., U.S. Patent Number 6,284,393 in view of Swirbel et al., U.S. Patent Number 5,460,922 is withdrawn due to applicant's argument.

Drawings

10. Figures 3 and 4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

12. Claims 1-5, 8-12, 14, 17-28, 51-55, 58-62, 64-65 and 67-80 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamazaki et al., U.S. Pre Grant Publication 2003/00227021 in view of Adomi et al., U.S. Patent Number 6,759,689.

Yamazaki discloses a light emission device that comprises a substrate that can be glass or a plastic substrate such as polyester and first and second electrodes as per instant claims 1, 20-23, 51 and 71-74 (see paragraph 0188). Additionally, the reference discloses a light absorbing multi-layered film disposed between the first and second electrodes as per instant claims 1 and 51 (see reference claim 1). Reference claim 5 discloses that the light absorbing multi-layered film contains at least one layer comprising one selected from the group of aluminum, copper, silver, platinum, rhodium, gold and nickel as per instant claims 1-2, 8, 51 and 58. Also, the reference discloses an organic layer disposed between the first and second electrode (see reference claim 23). Paragraph 0106 of the Yamazaki reference discloses that the second electrode can be a transparent conductive film such as ITO, indium oxide-zinc oxide alloy or zinc oxide as per instant claims 24-25 and 75-78. Reference claim 46 discloses a second metal layer disposed between the first and second electrode as per instant claims 17, 28, 69 and 80. Paragraph 0099 of the reference discloses that the metal film layer is transparent to light having a wavelength in a range from about 300 nm to about 800 nm as per instant claims 3, 16, and 67. Paragraph 0114 of the reference discloses that the metal-containing layer has a transmittance of visible light is 90-100% and being semi-transparent for visible light indicates that transmittance of visible light is 50 through 80% as per instant claims 4-5, 52-54 and 68. Yamazaki does not disclose that the light emitting device is a photovoltaic cell. However, a photovoltaic cell is encompassed by a

light emitting device. Therefore, it would have been obvious to one of ordinary skill in the art to recognize that a photovoltaic cell is a light emitting device as per instant claims 19 and 70.

Yamazaki does not disclose that the metal layer contains a plurality of domains that are discontinuous and the domains have a mean diameter of less than the wavelength of visible light, near infrared and infrared radiation as per instant claims 1, 9-12, 14, 51, 59-62, 64-65 and 79.

Adomi discloses a light emitting device comprising a substrate and a pair of electrodes with light emitting layer and a metal layer disposed therebetween (see column 4, lines 50-68).

Additionally, Adomi discloses that the metal layer is patterned with dots or islands (see column 11, lines 1-15). A patterned metal provides increased quantum efficient due to the contribution so reflected light on the metal layer (see Adomi; column 10, lines 47-68). Therefore, it would have been obvious to one of ordinary skill in the art to have the metal layer of the Yamazaki reference be patterned as dots or islands in order to have device that has increased external quantum efficiency. Neither reference discloses that the discontinuous layer covers at least one percent of the surface. However, this is an optimizable feature. Discovery of optimum values of a result effective variable involves only routine skill in the art *in re Boesch*, 617 F.2d 272,205 USPQ 215 (CCPA 1980). The discontinuous layer affects the reflection of light. Therefore, it would have been obvious to one of ordinary skill in the art to have the discontinuous layer present in the amount of at least one percent in order to have increased external quantum efficiency due to the contribution of reflected light.

Response to Arguments

13. Applicant's arguments with respect to the present claims have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Camie S. Thompson whose telephone number is (571) 272-1530. The examiner can normally be reached on Monday through Friday from 7:30 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano, can be reached at (571) 272-1398. The fax phone number for the Group is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



MILTON I. CANO
SUPERVISORY PATENT EXAMINER